

REMARKS

In the outstanding Office Action, the Examiner rejects claims 1-4, 6-16 and 18-20 under 35 U.S.C. §103(a) as being unpatentable over Tang et al., “A 1.2 V, 1.8 GHz CMOS Two-Stage LNA with Common-Gate Amplifier as An Input Stage,” IEEE, Oct. 2003 (hereinafter “Tang”) in view of U.S. Patent Publication No. 2003/0030494 filed in the name of G. Huang (hereinafter “Huang”).

In this response, Applicant amends independent claims 1, 19 and 20, and traverses the §103(a) rejections for at least the following reasons.

Regarding the §103(a) rejections, the combination of Tang and Huang fails to disclose each and every limitation of the claimed invention, and there is no motivation to modify either Tang or Huang to attain the claimed invention.

Amended independent claim 1 recites an amplifier comprising a first amplifying stage comprising a common-base transistor, a second amplifying stage, coupled to the first amplifying stage, comprising a cascode transistor pair, and at least one matching network, coupled to at least one of the first amplifying stage and the second amplifying stage, comprising a series transmission line and a shunt stub. Amended independent claim 20 recites certain similar limitations.

First, the Tang/Huang combination fails to disclose a first amplifying stage comprising a common-base transistor, as claimed. FIG. 1 of Tang only illustrates a common-source topology (FIG. 1(a)) and a common-gate topology (FIG. 1(b)). The Examiner now points to FIGs. 4 and 6 of Tang in rejecting the claim limitation. However, the Examiner goes on to acknowledge that transistor Mg is a common-gate input transistor. Thus, Applicant reasserts that there is no disclosure in Tang or Huang of the a first amplifying stage comprising a common-base transistor, as in the claimed invention.

Furthermore, one ordinarily skilled in the art would find no motivation to modify Tang or Huang to attain the claimed invention. The Examiner’s statement at page 3 that one would substitute a matching network from Huang with a matching network of Tang fails to appreciate that Tang and Huang address two disparate circuit configurations.

Regarding independent claim 12, a low-noise amplifier operative to amplify the input signal is recited, wherein the low-noise amplifier is implemented in accordance with a silicon-based technology and the input signal is a millimeter-wave signal, and further wherein the low-noise

amplifier comprises at least one matching network comprising a series transmission line and a shunt stub. Amended independent claim 19 recites certain similar limitations.

Applicant asserts that the claimed invention novelly recites a low-noise amplifier (LNA) implemented in accordance with a silicon-based technology (e.g., silicon germanium) wherein the input signal is a millimeter-wave signal. As explained in the background section of the present application, prior to the present invention, it was not known to implement millimeter-wave LNAs in a silicon-based technology.

Nothing in Tang or Huang suggests a millimeter-wave LNA implemented in a silicon-based technology. The Examiner's summary assertion at the top of page 4 fails to provide any citation of a reference that supports a showing that a millimeter-wave LNA implemented in a silicon-based technology was known prior to the present invention.

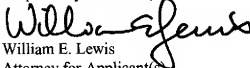
For at least the above reasons, Applicant asserts that independent claims 1, 12, 19 and 20 are patentable over the Tang/Huang combination.

Also, it is asserted that the claims that directly or indirectly depend from independent claims 1 and 12 are patentable over the cited combination, not only due to their respective dependence from claims 1 or 12, but also because such claims recite patentable subject matter in their own right.

In view of the above, Applicants believe that claims 1-4, 6-16 and 18-20 are in condition for allowance, and respectfully request withdrawal of the §103(a) rejections.

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Respectfully submitted,



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